

## **REMARKS**

Claims 1-20 are pending in this application. Attached hereto is a complete listing of all claims in the application, with their current status listed parenthetically. By this Response, claim 14 has been amended. The amendment to claim 14 has been drafted to impart precision into the claim by more particularly pointing out the invention. The claim amendment has not been drafted to overcome any prior art.

### **Rejection Under 35 U.S.C. § 112, 1<sup>st</sup> paragraph**

In the Response to Arguments section, the Examiner maintains the rejection of claims 1-20 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner states:

". . .how do you implement UWB network [*sic*] employing TDMA frames. The mere term "could develop" doesn't make it possible to develop ultra wide band network employing TDMA frames."

Applicant respectfully traverses this maintained rejection, and asserts that claims 1-20 are enabled by the originally-filed specification. In support, Applicant submits with this Response a Declaration under 37 CFR § 1.132, by Mr. Gregg Rasor, who is a person of ordinary skill in the art of ultra-wideband communications. Upon review of Applicant's specification, Mr. Rasor concluded that a person possessing the teachings found in Applicant's specification at the time of the claimed invention, and being of ordinary skill in the art of ultra-wideband communications, would be able to implement without undue experimentation Applicant's claimed invention.

In view of the above discussion, Applicant submits that claims 1-20 are enabled, and thus respectfully requests the Examiner to reconsider and withdraw this rejection.

## **Rejection Under 35 U.S.C. § 101**

In the Response to Arguments section the Examiner states:

“Applicant argues that claims 1, 9 and 20 is [*sic*] directed to claim a network of communication devices, which is a machine, and machines are one of the enumerated statutory invention categories defined in 35 USC 101. Examiner respectfully directs applicant to claims 1, 9 and 20, where no transmission or reception among a master device and plurality of slave devices takes place. Furthermore, merely reciting a multiplicity of ultra wide band signal [*sic*] encoded with function descriptive matter [*sic*] such as a network does not fall within any of the categories of patentable subject matter set forth in the 101 Interim Guidelines for statutory subject matter. The claims do not have a practical application by physical transformation or a practical application that produces a useful, tangible and concrete result” (emphasis added).

First, Applicant notes that each of claims 1, 9 and 20 recite, in part, “. . .slave devices **in communication with** the master device. . .” “Communication” is accomplished by transmission and reception among the master device and one or more slave devices. **A review of the originally-filed specification reveals approximately 45 occurrences of the word “communication,” which provides ample support for Applicant’s assertion. Therefore, the Examiner’s statement that no transmission and reception takes place is completely erroneous.** In addition, each of independent claims 1, 9 and 20 recite “networks” that include “devices.” A network comprised of devices is unquestionably a machine, and machines are one of the enumerated statutory invention categories defined in 35 USC 101.

The Examiner also states that the claims do not have “a practical application that produces a useful, tangible and concrete result.” Applicant responds as follows:

### **The Law of Statutory Subject Matter**

#### **A. Utility of Invention**

“To properly reject a claimed invention under 35 U.S.C. 101, the Office must (A) make a prima facie showing that the invention lacks utility, and (B) provide sufficient evidentiary basis for factual assumptions relied on in establishing the prima facie showing. *In re Gaubert*, 524 F.2d 1222, 1224, 187 USPQ 664, 666 (CCPA 1975) (“Accordingly the PTO must do more than merely question the operability – It must set forth factual reasons which would lead one skilled in the art to question the objective truth of the statement of operability). See M.P.E.P. 2107.02(IV). The requirements for a prima facie showing are additionally delineated in the M.P.E.P.

“The prima facie showing must include the following elements:

(A) An explanation that clearly sets forth the reasoning used in concluding that the asserted utility for the claimed invention is neither both specific and substantial nor well established;

(B) Support for factual findings relied upon in reaching this conclusion; and

(C) An evaluation of all relevant evidence of record, including utilities taught in the closest prior art.” *Id.*

If the Office cannot develop a proper prima facie case and provide evidentiary support for a rejection under 35 U.S.C. § 101, a rejection on this ground should not be imposed.” (emphasis added) *Id.* Further, the OG did not modify these requirements. “These Guidelines do not constitute substantive rulemaking and hence do not have the force and effect of law . . . Rejections will be based on the substantive law and it is these rejections which are appealable” OG: 22 November 2005. The OG does not modify in any way the applicable law under 35 U.S.C §101

(i) The Examiner has failed to make a prima facie case of lack of utility.

None of the Examiner’s 101 rejections include an analysis or even a statement that “the asserted utility for the claimed invention is neither both specific and substantial nor well established”. Further, the Examiner has failed to provide “support for factual findings” of lack of utility. Nor has the Examiner provided “An evaluation of all relevant evidence of record, including utilities taught in the closest prior art”. The 101 rejections are clearly improper on this basis. The Applicant therefore respectfully requests the Examiner reconsider and withdraw these rejections on this basis alone.

(ii) The utility of the present invention.

“To satisfy 35 U.S.C. § 101, an invention must be “useful” . . . Courts have used the labels “practical utility”, “substantial utility”, or “specific utility” to refer to this aspect of the “useful invention” requirement of 35 U.S.C. § 101.” See M.P.E.P 2107.01(I). Practical utility is a shorthand way of attributing ‘real-world’ value to the claimed subject matter. In other words, one skilled in the art can use the claimed invention in a manner which provides some immediate benefit to the public. *Nelson v. Bowler*, 626 F.2d 853, 856 USPQ 881, 883 (CCPA 1980)” Further, for an invention to be “useful” its utility has to be (i) specific; (ii) substantial; and (iii) credible. *In re Fisher*, 421 F.3d 1365, 1371, 76 USPQ2d 1225 (Fed. Cir. 2005). See OG: 22 November 2005, Section IV(C)(3)

(a) Specific Utility

A “specific utility” is specific to the subject matter claimed and can “provide a well-defined and practical benefit to the public.” *In re Fisher*, 421 F.3d 1365, 1371, 76 USPQ2d 1225, 1230 (Fed. Cir. 2005) (emphasis added) See M.P.E.P 2107.01(I)(A)

(b) Substantial Utility

“An application must show that an invention is useful to the public in its current form, not that it may prove useful at some future date after further research. (emphasis added) *In re Fisher*, 421 F.3d 1365, 1371, 76 USPQ2d 1225, 1230 (Fed. Cir. 2005)” See M.P.E.P 2107.01(I)(B)

(c) Credible Utility

“Where an applicant has specifically asserted that an invention has a particular utility, that assertion cannot be simply dismissed by Office personnel as being “wrong”, even when there is reason to believe that the assertion is not entirely accurate. Rather Office personnel must determine if the assertion is credible (i.e., whether the assertion of utility is believable to a person of ordinary skill in the art based on the totality of the evidence and reasoning provided). An assertion is credible unless (A) the logic underlying the assertion is seriously flawed, or (B) the facts upon which the assertion is based are inconsistent with the logic underlying the assertion.” (emphasis in the original) See M.P.E.P § 2701.02(III)(B).

As discussed above claims 1, 9 and 20 are directed to communication networks. One “well-defined” utility is disclosed in the Abstract, which states:

“The Medium Access Control layer protocol implements Quality of Service guaranties to the layers of the Open Systems Interconnection reference model above the Medium Access Control layer by providing guaranteed bandwidth links within the bandwidth range specified by those layers.”

Additionally, one of ordinary skill in the art would understand that the benefits of the claimed methods provide benefit in their current form and do not require further research. The asserted utility is therefore both specific and substantial. The Examiner has not challenged the credibility of the asserted utility. The rejection to these claims is therefore traversed and the Applicant respectfully requests the Examiner reconsider and withdraw the rejection of these claims.

Regarding claim 14, Applicant has amended the claim to specifically recite “a computer readable medium encoded with a program having instructions being executed by a computer”, as suggested by the Examiner.

Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw this rejection.

### **Rejection Under 35 U.S.C. § 103**

Regarding the Examiner’s maintained rejection of claims 1-4 9, 14 and 20, as unpatentable under 35 U.S.C. § 103(a) over U.S. Patent 6,275,544 ("Aiello"), in view of U.S. Patent 6,347,084 ("Hulyalkar"), the Examiner states in the Response to Arguments section:

“Examiner respectfully reemphasizes to the Applicant, the claimed subject matter (for example of claim 1) simply provides structure and no practical application. Thus, introducing a second reference with a missing timeslot in a TDMA frame definition is obvious in the art. Furthermore, Examiner provided a logical motivation for adding the missing timeslot, specifically; one is motivated to add the timeslot in order to enable permit [*sic*] precise, deterministic scheduling with reduction in delay and processing time for a reservation-based TDMA protocol” (emphasis added).

First, regarding the Examiner’s statement that “. . .the claimed subject matter (for example of claim 1) simply provides structure and no practical application,” Applicant invites the Examiner to re-read claim 1, which recites structure (such as an ultra wide band network, comprising a master device and a plurality of slave devices) and a practical application of communication using a Time Division Multiple Access frame having a recited list of specific elements.

Second, the Examiner’s proposed combination of Aiello and Hulyalkar overlooks the basic considerations that apply to obviousness rejections as contained in Section 2141 of the M.P.E.P. Specifically:

- (1) The claimed invention must be considered as a whole;
- (2) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (3) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (4) Reasonable expectation of success is the standard with which obviousness is determined. (emphasis added)

### **The References Must be Considered as a Whole and Must Suggest the Desirability and thus the Obviousness of Making the Combination**

"A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." M.P.E.P. § 2142.02

Viewing Aiello as a whole reveals that he teaches:

"[A] base band receiver system and method that receives and demodulates data transmitted, **without a carrier frequency**, as series of ultra-short, spread spectrum modulated electromagnetic pulses. The electromagnetic pulses each comprise a digital signal representative of a transmitted value. **The receiver system advantageously converts the ultra-short, spread spectrum pulses directly to data without going through intermediate frequency (IF) staging. The elimination of IF staging allows reduced cost and easier fabrication of the receiver as a single chip device.**" (emphasis added)

Importantly, in the Background of the Invention section, Aiello teaches the disadvantages of conventional communication technologies:

"Wireless communication increasingly relies on transmission of data in digital formats. **Typically, a data stream is modulated onto a carrier frequency**, and the modulated carrier signal is transmitted over a communications channel to a receiver or receivers. Modulation techniques generally utilize phase information of the carrier frequency. **Receivers for such transmission generally include a "front end" for filtering and amplifying the carrier signal, one or more mixer circuits for converting the carrier frequency to an intermediate frequency or IF, one or more IF stages where most of the receiver gain and selectivity takes place, and detection or demodulation circuitry for recovering information from the signal.** Where data is received in a synchronous digital format, a clocking system such as a phase lock loop circuit is also included with the receiver." (emphasis added)

Thus, Aiello teaches a base band receiver that transmits ultra-short pulses, which eliminates conventional IF staging, and the carrier signal that is modulated to carry the data.

In direct contrast, Hulyalkar teaches a conventional carrier signal communication system that employs IF staging and conventional carrier signal modulation. See FIGS. 1 and 2, elements 28 and 33 ("1394 PHY"), which a conventional communication protocol that transmits data by modulating a carrier signal.

Thus, it is abundantly clear, that when viewed as a whole, the communication technology taught in Aiello teaches directly away from that taught in Hulyalkar. That is, Aiello's teachings "lead away from the claimed invention" as he teaches directly against using the communication technology taught in Hulyalkar.

#### **No Reasonable Expectation of Success**

According to M.P.E.P. § 2142.01 "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious."

The Examiner proposes to combine Aiello with Hulyalkar. As discussed above, Hulyalkar employs conventional carrier wave technology. In contrast, Aiello teaches a base band radio that emits "ultra-short spread spectrum pulses."

Clearly, a fundamental change to Aiello's principle of operation is required for the Examiner's proposed combination to operate, and thus there is no reasonable expectation of success.

In view of the above discussion, Applicant respectfully submits that the Section 103 rejection of claims 1, 9, 14 and 20 has been traversed. Because claims 2-4 depend from claim 1,

it is respectfully submitted that the rejection of claims 2-4 have been traversed by virtue of their dependency from claim 1. M.P.E.P. § 2143.03.

### **Related Co-Pending U.S. Patent Applications and Related U.S. Patents**

Applicant informs the Examiner of the following related co-pending U.S. patent applications and related U.S. patents:

<b>U.S. Patent Number</b>	<b>Issue Date</b>
7,023,833	04/04/2006
7,031,294	04/18/2006
6,275,544	08/14/2001
6,970,448	11/29/2005
6,952,456	10/04/2005
7,088,795	08/08/2006
7,035,246	04/25/2006
6,944,148	09/13/2005
6,430,211	08/06/2002
6,658,053	12/02/2003
6,597,683	07/22/2003

<b>Serial Number</b>	<b>File Date</b>
11/153,839	06/14/2005
11/154,963	06/15/2005
11/193,705	07/29/2005
11/121,613	05/04/2005
10/820,348	04/07/2004
10/924,143	08/23/2004
11/156,056	06/16/2005
10/611,199	06/30/2003
10/623,061	07/18/2003
09/599,973	06/21/2000
10/427,895	04/30/2003
09/710,065	11/09/2000
10/238,995	09/09/2002
09/393,040	09/09/1999



## **Conclusion**

Applicant believes that this Response has addressed all items in the Office Action and now places the application in condition for allowance. Accordingly, favorable reconsideration and allowance of claims 1-20 at an early date is solicited. With this Response, Applicant submits a Declaration under 37 CFR § 1.132, and a Supplemental Information Disclosure statement. The fee for a RCE, a three-month extension of time and the Supplemental Information Disclosure statement accompanies this Response. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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Date



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